

# ***Interactive comment on “Comprehensive aerosol and gas data set from the Sydney Particle Study” by Melita Keywood et al.***

**Melita Keywood et al.**

melita.keywood@csiro.au

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We would like to thank Referee 1 for his time taken to review this manuscript and for his comments which will result improvements to the manuscript. We have addressed the comments below. Referee 1 comment This paper presents itself as the metadata for two datasets from the Sydney Particle Study in 2011/12 available on the CSIRO servers. The two datasets are easily accessible following the links in the paper and easy to download. The paper itself is well written and is a good overview of the data. The descriptions of the data and accompanying plots are sufficiently detailed to inform potential users of the type and amount of data available. There is no information on any quality assurance processing, which would add to confidence in the data. Our response The manuscript does include descriptions of the calibration processes

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used to ensure high quality data in the method description for each parameter and we have assigned an uncertainty associated with the check were possible. For example, the text for the PTR-MS description is reproduced below The PTR-MS operates with the aid of a custom built auxiliary rack that regulates the flow of air in the sample inlet and controls whether the PTR-MS is sampling ambient or zero air or calibration gas. During this study zero readings and calibrations against certified gas standards were performed on the PTR-MS several times per day. Four calibration standards were used during the study, diluted to atmospheric concentrations using a set of mass flow controllers and a mixing chamber in the auxiliary rack. The PTR-MS was calibrated for: formaldehyde, acetaldehyde, acrolein, methacrolein, acetone, methyl ethyl ketone, methanol, ethyl acetate, benzene, xylene, trimethyl benzene, isoprene,  $\alpha$ -pinene, 1,8 cineole, dimethyl sulphide, acetonitrile and the mono-, di- and tri-chlorobenzenes. Only  $m/z$  that were detected above the method detection limit (MDL) greater than 25% of the time and had peak to noise ratios greater than 5 (95th percentile/MDL) are reported. Further details are available in Galbally et al. (2007) and Dunne et al. (2012). In addition, where possible we operated the instruments following an Australian or international standard method which are put in place to ensure high quality data. The standards followed and reported in the manuscript are 1. AS 3580.4.1-2008: Methods of sampling and analysis of ambient air Determination of sulfur dioxide - Direct reading instrumental method, 2008. 2. AS/NZ 3580.9.8-2008: Determination of suspended particulate matter—PM<sub>10</sub> continuous direct mass method using a tapered element oscillating microbalance analyser, 2008. 3. AS/NZS 3580.12.1:2001: Methods for sampling and analysis of ambient air - Determination of light scattering - Integrating nephelometer method, 2001. 4. AS/NZS 3580.14:2011: Methods for sampling and analysis of ambient air - Part 14: Meteorological monitoring for ambient air quality monitoring applications, 2011. 5. AS/NZS 3580:5.1:2011: Methods of Sampling and Analysis of Ambient Air – Determination of oxides of nitrogen- Direct reading instrumental method., 2011. 6. AS/NZS 3580:6.1:2011: Methods of Sampling and Analysis of Ambient Air – Determination of ozone- Direct reading instrumental method., 2011.

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7. AS/NZS 3580:7.1:2011: Methods of Sampling and Analysis of Ambient Air – Determination of carbon monoxide- Direct reading instrumental method., 2011. Referee 1 comment There are a few typos, for example, NOy in table 1 (page5) rather than NOx but nothing serious - a final, good proofread required Our response We agree and have carried out a thorough proof read of the manuscript. We have corrected a number of minor mistakes in the text and in the reference list.

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